

Amendments to the Claims:

The listing of claims below replaces all previous versions of the claims in this application.

RECEIVED
CENTRAL FAX CENTER
MAR 02 2007

1. (Currently Amended) A vortex tube cooling system, comprising:
a housing adapted for subsurface disposal, the housing containing:
a first ~~pressure~~ gas storage chamber;
a vortex tube coupled to the first pressure chamber;
a cooling chamber coupled to the vortex tube; and
a second ~~pressure~~ gas storage chamber coupled to the cooling chamber;
wherein the ~~pressure~~ first and second gas storage chambers are adapted to stimulate a cool fluid flow from the vortex tube into the cooling chamber.
2. (Currently Amended) The system of claim 1, wherein the first ~~pressure~~ gas storage chamber is adapted for pressurization and the second pressure chamber is adapted for evacuation.
3. (Currently Amended) The system of claim 1, the housing further comprising a third ~~pressure~~ gas storage chamber coupled between the first pressure chamber and the vortex tube, the third chamber adapted to sustain a predetermined fluid pressure for input to the vortex tube.
4. (Currently Amended) The system of claim 1, the housing further comprising a heat exchanger coupled between the second ~~pressure-gas storage~~ chamber and the vortex tube, the exchanger adapted to receive hot fluid flow from the vortex tube.
5. (Currently Amended) The system of claim 1, the housing further comprising a compressor adapted to pump a fluid from the second ~~pressure-gas storage~~ chamber into the first ~~pressure~~ gas storage chamber.
6. (Currently Amended) The system of claim 5, the housing further comprising:
a third ~~pressure-gas storage~~ chamber coupled between the cooling chamber and the second ~~pressure-gas storage~~ chamber; and

a second compressor adapted to pump a fluid from the third chamber into the second chamber.

7. (Original) The system of claim 1, wherein the cooling chamber is double walled and adapted to allow fluid flow from the vortex tube through a space between the walls.
8. (Original) The system of claim 1, wherein the housing is adapted for disposal within a borehole traversing a subsurface formation while drilling the borehole.
9. (Original) The system of claim 1, wherein the housing is adapted for disposal within a borehole traversing a subsurface formation via a wireline cable.
10. (Original) The system of claim 1, further comprising a plurality of valves linked between the first, second, and cooling chambers to regulate fluid flow through the chambers.
11. (Original) The system of claim 1, wherein the cooling chamber is adapted to house an electronic component.
12. (Currently Amended) The system of claim 1, wherein the exterior of at least one of the first ~~pressure~~ gas storage chamber, second ~~pressure~~ gas storage chamber, ~~or~~ and the cooling chamber is covered by an insulating material.
13. (Currently Amended) The system of claim 1, wherein at least one of the first ~~pressure~~ gas storage chamber, second ~~pressure~~ gas storage chamber, ~~or~~ and the cooling chamber is disposed within a Dewar flask.
14. to 25. (Canceled)
26. (Currently Amended) A method for cooling a component within a housing adapted for subsurface disposal, comprising:
 - a) equipping the housing with:
 - a first ~~pressure~~ gas storage chamber;
 - a vortex tube coupled to the first ~~pressure~~ gas storage chamber;
 - a cooling chamber coupled to the vortex tube;

- a second ~~pressure~~ gas storage chamber coupled to the cooling chamber;
- b) disposing the component to be cooled within the cooling chamber; and
- c) adapting the ~~pressure~~ gas storage chambers to stimulate a cool fluid flow from the vortex tube into the cooling chamber.
27. (Currently Amended) The method of claim 26, wherein step (c) comprises pressurizing the first pressure gas storage chamber and evacuating the second ~~pressure-gas storage~~ chamber.
28. (Currently Amended) The method of claim 26, wherein step (c) comprises pumping a fluid from the second pressure gas storage chamber into the first ~~pressure-gas storage~~ chamber.
29. (Original) The method of claim 26, further comprising equipping the housing with a heat exchanger coupled to the vortex tube to receive hot fluid flow from the vortex tube.
30. (Currently Amended) The method of claim 26, further comprising equipping the housing with a third ~~pressure~~ gas storage chamber coupled between the cooling chamber and the second pressure chamber, and pumping a fluid from the third chamber into the second chamber.
31. (Original) The method of claim 26, wherein the cooling chamber is double walled and adapted to allow fluid flow from the vortex tube through a space between the walls.
32. (Original) The method of claim 26, further comprising disposing the housing within a borehole traversing a subsurface formation while drilling the borehole.
33. (Original) The method of claim 26, further comprising disposing the housing within a borehole traversing a subsurface formation via a wireline cable.
34. (Original) The method of claim 26, further comprising equipping the housing with a plurality of valves linked between the first, second, and cooling chambers to regulate fluid flow through the chambers.

35. (Original) The method of claim 26, wherein the component to be cooled is an electronic component.
36. (Currently Amended) The method of claim 26, wherein at least one of the exterior of the first ~~pressure~~ gas storage chamber, second ~~pressure~~ gas storage chamber, ~~or~~ and the cooling chamber is covered by an insulating material.
37. (Currently Amended) The method of claim 26, wherein a least one of the first ~~pressure~~ gas storage chamber, second ~~pressure~~ gas storage chamber, ~~or~~ and the cooling chamber is disposed within a Dewar flask.
38. (New) A vortex tube cooling system, comprising:
a housing adapted for subsurface disposal, the housing containing:
a first gas storage chamber;
a vortex tube coupled to the first pressure chamber;
a cooling chamber coupled to the vortex tube; and
a second gas storage chamber coupled to the cooling chamber, wherein the first and second gas storage chambers are adapted to stimulate a cool fluid flow from the vortex tube into the cooling chamber; and
a compressor adapted to pump a fluid from the second gas storage chamber into the first pressure chamber.
39. (New) The system of claim 38, wherein the first gas storage chamber is adapted for pressurization and the second pressure chamber is adapted for evacuation.
40. (New) The system of claim 38, the housing further comprising a third gas storage chamber coupled between the first pressure chamber and the vortex tube, the third chamber adapted to sustain a predetermined fluid pressure for input to the vortex tube.

41. (New) The system of claim 38, the housing further comprising a heat exchanger coupled between the second gas storage chamber and the vortex tube, the exchanger adapted to receive hot fluid flow from the vortex tube.
42. (New) The system of claim 38, wherein the cooling chamber is double walled and adapted to allow fluid flow from the vortex tube through a space between the walls.
43. (New) The system of claim 38, wherein the housing is adapted for disposal within a borehole traversing a subsurface formation while drilling the borehole.
44. (New) The system of claim 38, further comprising a plurality of valves linked between the first, second, and cooling chambers to regulate fluid flow through the chambers.
45. (New) The system of claim 38, wherein the cooling chamber is adapted to house an electronic component.
46. (New) The system of claim 38, wherein the exterior of at least one of the first gas storage chamber, second gas storage chamber, and the cooling chamber is covered by an insulating material.
47. (New) The system of claim 38, wherein at least one of the first gas storage chamber, second gas storage chamber, and the cooling chamber is disposed within a Dewar flask.
48. (New) The system of claim 38, the housing further comprising:
a third gas storage chamber coupled between the cooling chamber and the second gas storage chamber; and
a second compressor adapted to pump a fluid from the third chamber into the second chamber.